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# E1: Patient and Organisational Risk factors for Pressure Ulcer Development – Implications for Practice

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## Session description:

### Background

There is good evidence that pressure ulcer risks are associated with patients' health status but also suggestive evidence that the organisation of care can influence their risks. In the Pressure Ulcer Programme (PURPOSE)[1], we aimed to a) describe and explain the ways in which the organisation of treatment and care influences the development of severe pressure ulcers and b) to develop and validate an evidence-based risk assessment framework to guide decision making about the risk of developing pressure ulceration and the risk of progression to more severe ulceration.

### Methods

We undertook two related work-packages:

#### Severe PU

To explore organizational factors associated with severe PU development we undertook a retrospective case-series involving 8 patients [2 Pinkney et al]. We interviewed the patients/carers and multi-professional staff involved in their care and also reviewed records in order to develop a coherent account of events leading up to the development of a severe PU.

#### Risk Factors and Risk Assessment

To develop an evidence based Risk Assessment Framework (the PURPOSE T) we undertook a series of studies including: (i) systematic review [3]; (ii) consensus study [4]; (iii) conceptual framework development and theoretical causal pathway [5]; (iv) design and pre-testing of draft Risk Assessment Framework; (v) field test to assess reliability, validity, data completeness and clinical usability [1].

## Results

### Severe PU

For seven of eight patients the general organisational context played a key role in severe PU development and in addition, for four, specific events also contributed to PU development. In only one patient was the PU deemed unavoidable. Severe pressure ulcers were more likely to develop in contexts where clinicians failed to listen to patients/carers or recognise/respond to high risk or the presence of an existing pressure ulcer, and services were not effectively co-ordinated.

### Risk Factors and Risk Assessment

The systematic review identified 15 risk factor domains and 46 sub-domains, with three primary risk factor domains of mobility/activity, skin/pressure ulcer status and perfusion (including diabetes). It suggests that no single factor can explain pressure ulcer development [3]

The consensus study facilitated agreement of risk factors/assessment items of the minimum data set (including immobility, pressure ulcer and skin status, perfusion, diabetes, skin moisture, sensory perception and nutrition), and draft risk assessment framework (PURPOSE T) development [4].

The new conceptual framework incorporates 5 key components (mechanical boundary conditions, physiology and repair, mechanical properties of tissue, geometry of tissue/bone and transport and thermal properties) and their impact on internal strains, stresses and damage thresholds. The theoretical causal pathway identifies direct, key indirect and other potential causal factors for pressure ulcer development [5].

The design and pre-testing of a draft PURPOSE T led to improved usability prior to the field test which demonstrated that inter-rater and test retest agreement for PURPOSE T was 'very good' (Kappa) for the assessment decision overall [1].

## Conclusions

The severe PU project illustrates the need to listen and respond to patients and that staff failed to monitor skin status effectively and escalate care when deterioration was observed [2]. The final PURPOSE T has the following features: Minimum Data Set; screening stage to target assessment towards those in

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need; full assessment stage; use of colour to weight risk factors; ; and decision pathways which distinguish patients with an existing pressure ulcer or scarring who require secondary prevention and treatment and those at risk who require primary prevention [1, 6]. The results from both studies were drawn together through the development of an active monitoring model of care.

## References

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